NAVAL SURFACE WARFARE CENTER PANAMA CITY DIVISION
Ensuring Warfighting Dominance in the Littoral Battlespace

THREAT TRACKER (T2)

Program Overview

April 2022

Expanding the Advantage through Collaboration

NSWC PANAMA CITY DIVISION

Agenda

- Threat Tracker
  - Team
  - How it works
  - Features
  - Schedule
  - Way Forward
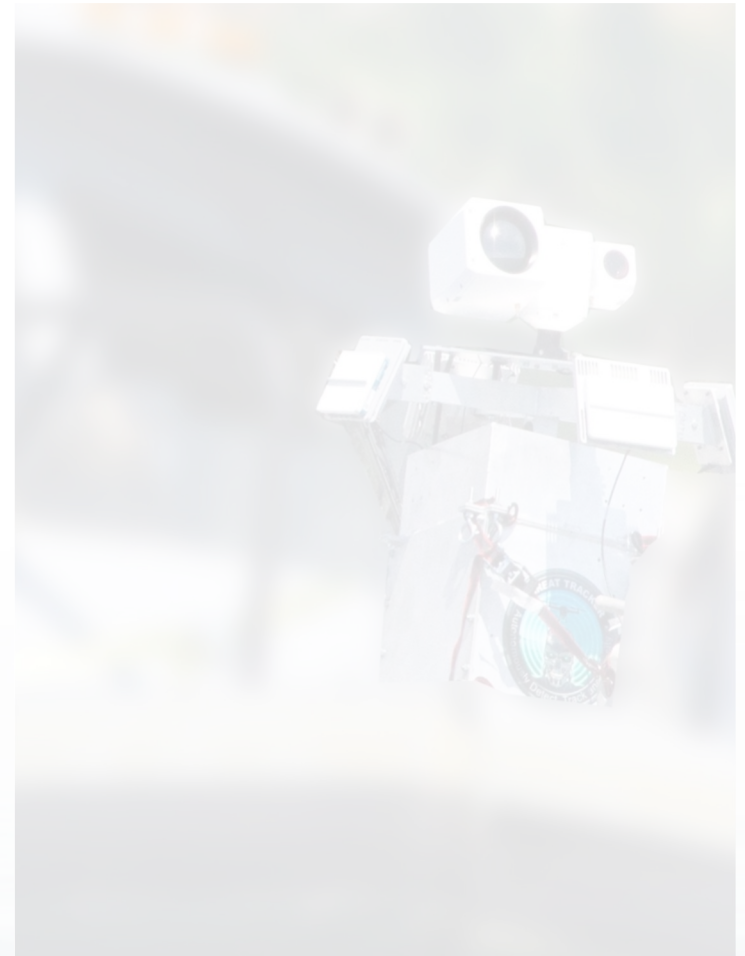
UAS Threats to the DoD

- Unmanned Aircraft Systems (UAS) pose a threat to DoD assets and facilities; the DoD seeks to detect, track, and identify these UAS to educate decisions for potential counter-measures

- Most systems under development that address this problem are bulky and have limited functionality
  - Must be static while operating
  - Specialized equipment or personnel needed to deploy and setup
  - Need infrastructure to operate
  - Only detects based off of RF signature

- Threat Tracker aims to address these limitations in a 2-man portable, small form factor solution
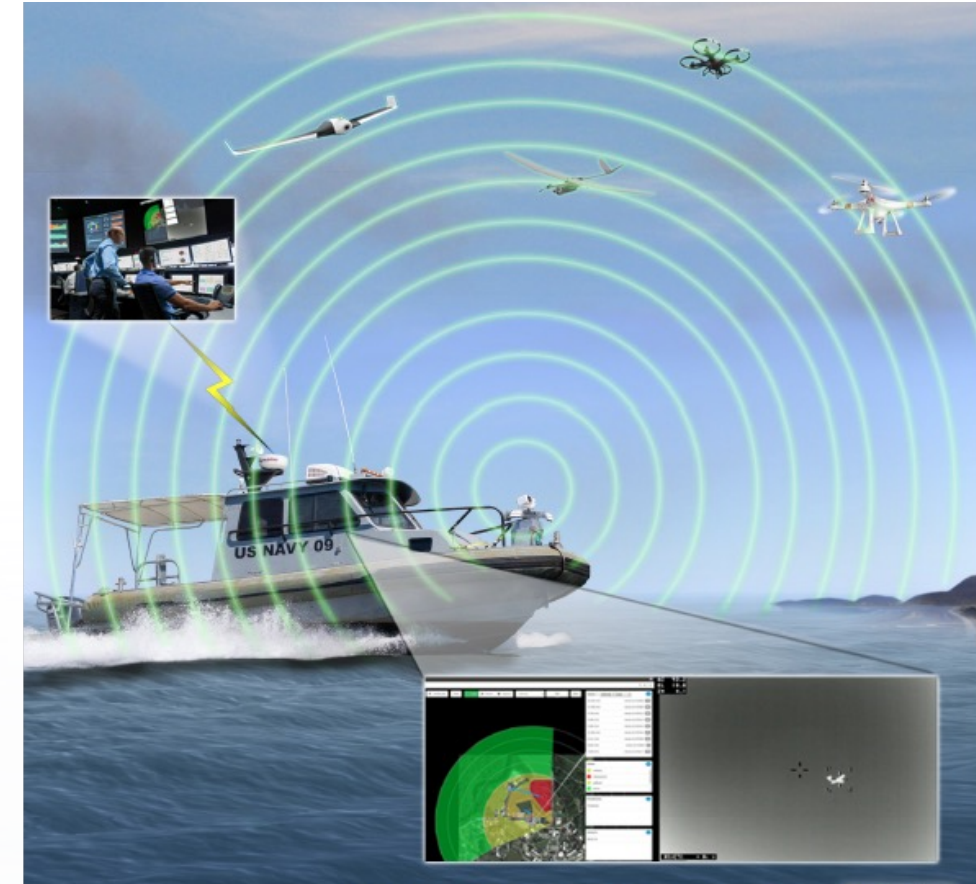
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Who We Are

- Persistent Awareness Branch (E26) at the Naval Surface Warfare Center Panama City Division (NSWC PCD)

- Background in intrusion detection for DoD

- Perimeter protection
  - Video Analytics
  - Sensor fusion

- One full-time Technical Lead/Mechanical Engineer

- One full-time Software Engineer

- 3 quarter-time junior level Software support personnel (Software Engineer, Computer Engineer, and a Computer Scientist)
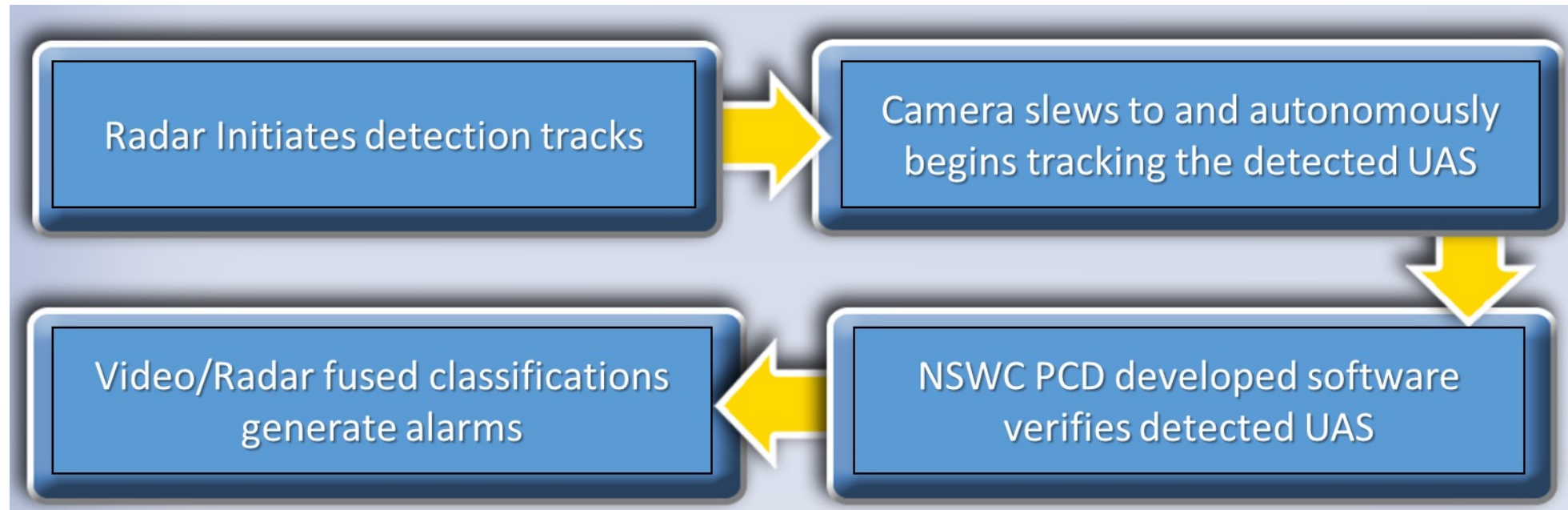
What is Threat Tracker?

- Threat Tracker is:
  - Small form factor UAS detection system
  - For use in mobile or static environments
  - Detects, Tracks and accurately Classifies small UAS
  - No user input needed following initial setup.
  - Utilizes locally developed software incorporating the latest cutting edge techniques and sensor fusion to classify detections from radar data and computer vision technology

Target Acquisition & Identification Process

Radar Initiates detection tracks → Camera slews to and autonomously begins tracking the detected UAS → NSWC PCD developed software verifies detected UAS → Video/Radar fused classifications generate alarms

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Portability

- The Threat Tracker system is 2-man portable.
  - Packs and stores in four Pelican cases.
  - Can be checked onto commercial flights.
  - Fits into the back of a minivan while retaining seating for 5.

Rapid Response

- T2 is set up and operational within minutes, not hours or days.

- T2 can be deployed on both static or moving platforms and retain all operational capabilities.

Autonomous UAS Detection

- Operators cannot remain focused on monitoring for drones like a persistent autonomous system

- UAS counter-measure decision-making timelines are seconds and any actions that need to be taken need must be done immediately and without hesitation

- The cost to staff a full time operator around the clock becomes unsustainable

- By removing the human from the loop, staff is available to perform other important tasking

Future Threat Tracker Development

Target ID and Correlator

- Improved tracking capability

Hardware refinement

- Weatherize system
- Deployment/mounting options
- Power conditioning and backup

Cybersecurity

- Continued system hardening against cybersecurity threats

Additional Sensor Integration

Questions?

*Ensuring Warfighting
Dominance in the
Littoral Battlespace*